REMARKS

Claims 1-15 are currently pending in the application. The foregoing separate sheets marked as "Listing of Claims" shows all the claims in the application, with an indication of the current status of each.

The Examiner has rejected claims 1-15 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,516,301 to Aykin in view of U.S. Patent No. 5,963,919 to Brinkley et al. ("Brinkley"). The Examiner acknowledges that Aykin does not teach that the components have different costs. Indeed, as demonstrated graphically in an interview with the Examiner on April 1, 2004, using the table attached as Exhibit A in response to the previous office action, under Aykin's method, meeting a desired fill rate is not equivalent to minimizing the total inventory cost of components unless the unit cost is the same for every component. This is inherent in Aykin's method. The novelty of the present invention is that it provides a way of significantly reducing the overall inventory cost of components by reducing the fill rate of a high-cost component only slightly, and does so in such a way that total inventory costs are minimized.

The Examiner also acknowledges that Aykin does not teach that the difference in cost of components determines the result of the replenishing step. However, the Examiner now asserts that Brinkley teaches an inventory management strategy wherein the different costs of components determines the replenishment of that component. This assertion is not supported by the Brinkley reference. The Brinkley patent has a quite different focus than the claimed invention. It addresses the question of what inventory strategy to select for a particular sellable product, given that different sellable products have different characteristics in terms of costs, demand pattern, committed customer service, etc. Once a product is classified, the method recommends an inventory strategy and calculates some operational parameters that

are necessary to implement the recommended strategy such as kanbans, reorder points, safety stocks and economic order quantities. Importantly, Brinkley does not combine multiple components within a single strategy. The main contribution of the Brinkley patent is a method for a) evaluating and classifying products based on characteristics like historical order volume, historical demand volatility, stable demand vs. rare demand, replenishment setup costs, holding costs, etc., b) recommending one of six generic inventory management strategies for each product based on how the product is classified, and c) calculating operational parameters necessary to implement the recommended inventory strategy.

The Examiner cites Figure 4 of Brinkley (which shows a database field for the unit cost of an inventory item), col. 5, lines 27-41 (describing the circumstances where the Make-To-Order inventory strategy is the appropriate selection, in which one factor is that "cost is high relative to volume"), col. 10, lines 25-37 (which describes selection of inventory strategy #5, Multi-Input Expert Planning, where among other factors Average Order Cost exceeds a certain limit, implying that there are different costs to be averaged). These references merely recognize that costs may be different. Nothing is suggested by way of using these cost differences to devise a novel inventory replenishment strategy, so as to reduce the total cost of inventory of the components. Quite the contrary, Brinkley simply uses existing and well known inventory management strategies.

The Examiner has merely observed that cost differences exist. But this does not support the argument that Brinkley suggests that these differences themselves can be used to determine the result of a replenishment step applicable to the very components whose costs are different. None of the foregoing citations to Brinkley combines differing component costs, an omission which is fatal to the Examiner's argument. It would only be through improper hindsight that the significance of the difference between the cost of one component and the cost of another in the operation

of an inventory strategy covering BOTH components could be observed by one skilled in the art. It should be emphasized that Brinkley is concerned with choosing an appropriate inventory strategy for each inventory item separately. Cost differences may lead to selection of different inventory strategies for different items. But Brinkley says nothing about an inventory strategy for a combination of items. Thus – absent hindsight – there is simply no concept in Brinkley of a difference in component costs being used in any particular inventory strategy. Consequently, there is no connection to Aykin.

The argument of the Examiner depends upon evidence not supported in Brinkley. Brinkley uses existing and well known inventory replenishment strategies, and these strategies do not include the novel optimization strategy of the present invention. For the Examiner's argument to be viable, Brinkley would have to show or suggest that component cost differences are usable to optimize replenishment strategy. However, Brinkley does not show or suggest such an innovation. Instead, Brinkley's innovation is to combine multiple (but individually well known) inventory management strategies into a system that analyzes the inventory portfolio on an item-by-item basis to assign the most suitable of these multiple inventory strategies to each item individually and separately.

Thus Brinkley's method is potentially applicable to managing individual inventory items in a warehouse, perhaps in a retail distribution environment. But it would not be suitable at all for a situation – such as in Aykin and the present invention – where it is important to have a common strategy for a totality of components, because there are multiple products and common components on bills-of-materials for assemble-to-order or configure-to-order operations. This is the challenge of high-technology manufacturing-assembly and multi-level supply chains. Brinkley's method does not meet a threshold test of relevance to that environment.

The two instances in Brinkley where product costs are used are the calculations of economic order quantities for strategies 3 (in the EOQ formula shown in col. 13, lines 5-30, cited by the Examiner) and 5 (in the EOQ formula shown in col. 13, lines 36-61). However, these costs are the costs of individual items and do not suggest the relevance of costs differences between components for use in a common inventory strategy for determination of the results applicable to each of the components. The present invention determines cost-optimal safety stock levels in a CTO assembly system with multiple products and multiple components. It analyzes multiple components in a joint optimization model, and explicitly models the interdependencies of component inventories and their effect on customer serviceability. The EOQ formula for a single product scenario is unrelated to the problem solved by the present invention because it does not capture interdependencies introduced through bills-of-materials. It can not be combined with or extended to an assembly-type model such as that of Aykin or the present invention.

As presented previously, each of independent claims 1, 4, 5, 8, 13 and 15 include the element of a reduction (claim 1) or minimization (claims 4, 5, 8, 13 and 15) of the total inventory cost of components, wherein the cost of at least one component differs from the cost of at least one other component. These independent claims, as previously presented, also include the cost difference between components.

The Examiner has not shown that the method of Aykin could be modified so that its optimization logic would take account of differences in the costs of individual components, nor has the Examiner provided a motivation from the combination of Aykin and Brinkley for doing so (apart from impermissible hindsight), nor a likelihood of success in pursuing such a modification.

The Examiner is reminded of the basic considerations which apply to obviousness rejections as set out in MPEP 2141. Specifically, "When applying 35 U.S.C. 103, the following tenets of patent law must be adhered to:

"(A) The claimed invention must be considered as a whole;

"(B) The references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination;

"(C) The references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention; and

"(D) Reasonable expectation of success is the standard with which obviousness is determined."

The incorrectness of the Examiner's argument may be further understood with reference to the applicant's statement – made in a prior response and repeated above – that "under Aykin's method, meeting a desired fill rate is not equivalent to minimizing the total inventory cost of components unless the unit cost is the same for every component" (emphasis supplied). Thus, Aykin does indeed provide an equivalent cost optimization result in the special case where the unit costs are the same for all components. But this special case is excluded from the claims of the present invention by the limitation requiring that the cost of at least one component differs from the cost of at least one other component. By the same token, Aykin necessarily fails to provide or suggest an equivalent cost optimization result where component costs differ. The novelty of the present invention with respect to the disclosures of Aykin is confirmed by having an optimization logic that is based upon differences in the costs of different components, a methodology that is not disclosed or suggested by Aykin. The disclosures of Brinkley regarding the relevance of different component costs in determining which of six standard inventory strategies to apply to particular components does not provide any suggestion at all regarding the application of an inventory strategy to the components common to a bill of materials, much less to the relevance of the cost differences between components to the result of an inventory strategy applied to the totality of the very components whose costs are different. The proposed addition of component costs from Brinkley, argued by the

Examiner, is therefore operably suggestive only through hindsight, and does not accomplish a showing of *prima facie* obviousness from Aykin and Brinkley.

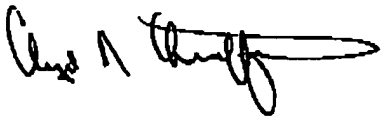
Consequently, it is submitted that the Examiner's rejection of independent claims 1, 4, 5, 8, 13 and 15 is overcome, and that the same conclusion applies to the remaining claims which depend from these independent claims.

In view of the foregoing, it is requested that the application be reconsidered, that claims 1-15 be allowed, and that the application be passed to issue.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at 703-787-9400 (fax: 703-787-7557; email: clyde@wcc-ip.com) to discuss any other changes deemed necessary in a telephonic or personal interview. It is specifically requested that the Examiner allow an interview, in which one of the inventors can further explain the chart provided in Attachment A, and its significance as an illustration of the applicant's point that Aykin's method fails to provide cost-optimal inventory policies when component costs are not identical.

If an extension of time is required for this response to be considered as being timely filed, a conditional petition is hereby made for such extension of time. Please charge any deficiencies in fees and credit any overpayment of fees to Deposit Account 50-0510 (IBM-Yorktown).

Respectfully submitted,



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